

-ORR-

By Mgr. Nichols
for Evaluation
Effect

April 1990

LOWER HATCHIE NATIONAL WILDLIFE REFUGE

INTRODUCTION:

Lower Hatchie National Wildlife Refuge was established in 1980 by the Migratory Bird Conservation Commission. The approved acquisition involves 8,600 acres lying along the Hatchie River in Lauderdale and Tipton Counties from about 12 miles west of the town of Henning to its confluence with the Mississippi river. The acquisition boundary encompasses the bulk of the remaining hardwood bottomland forest along the lower 17 miles of the Hatchie River. Lower Hatchie is 40 miles west of the refuge headquarters in Brownsville, Tennessee and 50 miles north of Memphis, Tennessee.

Two tracts totalling 1,095 acres were purchased with Duck Stamp funds in 1980 and an additional seven tracts, totalling 884 acres, were acquired in late 1981 and early 1982. An eight acre tract outside the original boundary was purchased and donated by The Nature Conservancy in December 1982. This acquisition provided high ground for a future building site, fee title vehicular access to the refuge for Service employees and the public, and brought refuge acreage to 1,989. In 1985, two more tracts, 638 acres in Tipton County and 1,386 acres in Lauderdale County, were acquired, bringing the refuge to 4,011 acres. Purchase of an additional 127 acres in 1986, north of Highway 87, brought refuge acreage to a total of 4,138 acres. (See Attachment)

The primary purpose of the refuge is to preserve for public benefit a representative portion of bottomland hardwood forest as habitat for wintering waterfowl and other migratory birds. Land types include 49 acres of open, deep, fresh water, 652 acres of seasonal wetlands, 1,101 acres of cropland, 2,183 acres of forest, and 20 acres of dirt and gravel roads, building sites, and parking areas. The 1985 Sullivan acquisition in Lauderdale County provided the bulk (1,000 acres) of the refuge farm land, which is adjacent to the Mississippi River. This area, known as the Fulton Farm, underwent extensive development in 1988, in regards to both habitat and refuge facilities. The public entrance road was re-routed, and a sub-headquarters office was set up to better facilitate both refuge and public use management activities on site. Between March and May, over 440,000 cubic yards of fill were put in place for five miles of levees and spillways, and sixteen new water control structures were installed. This created six new impoundments in addition to King Pond, and will provide the capability for storing water and inundating approximately 315 acres of cropland and/or moist-soil habitat for migrating waterfowl.

HABITAT MANAGEMENT PROGRAMS

FORESTRY

There is currently no forestry management program in effect on the 2,200 acres of bottomland hardwoods. There is an overmature oak stand on the Shannon Tract that is beginning to breakdown, but the understory is heavy with hackberry and maple. Any management cuts here must be timed with advance oak regeneration and TSI to ensure release.

A forestry management plan is needed, but for the current small acreage which includes a lot of tupelo and cypress (some 600 years old) and the current situation, no advance oak regeneration, a plan is not a high priority item.

However, acquisition of additional forest lands should be a high priority. The 2,000 acre ATCO Tract in Tipton County was cut over in 1985 and now, depending upon reinvestment opportunities, they should be a willing seller. Of course, if purchased funds would be needed to formulate and carry out a management plan.

The 600 acre Rice Tract should be the highest priority under consideration. It is not only an inholding, but contains good timber in an almost ready-made GTR. The 120 acre Rorie Tract, also a high priority from an inholding standpoint, has limited forestry resources.

If both the ATCO and Rice Tracts were bought, there would be a much greater need for a management plan. However, if as the case at Chickasaw, the lands are bought and no funds provided for management there seems to be little reason to buy them.

Dr. David Shonkman of The University of Alabama is conducting an on-going study of bottomland hardwoods along the section of the Hatchie River running through the refuge. His first reports are due any day now. He is very excited about the age of some of the cypress trees on the refuge. I feel sure he will want to have input in our forestry management plan.

MOIST-SOIL PROGRAM

From 1985 until 1988, moist-soils were managed in King Pond with only partial success. There was and is no good water source. With the levee development of 1988 some management leverage was gained, but we still lack a dependable water source.

The levee development in the spring of 1988 was followed by powder dry conditions until August. Sesbania, cocklebur and Johnsongrass were severe problems. Wet conditions prevailed in 1989 and moist-soil production was good. Sesbania is still a problem. Water primrose became well established in King Pond in 1989.

Plans for 1990 include farming King Pond and the Rice Line Tract. This should help resolve problems with sesbania, water primrose and woody vegetation. Water is retained in the H-line impoundment. It will be released later this summer - around June 1- as dictated by evaporation and other conditions. The released water may be used to irrigate crops in King Pond.

CROPLAND

From acquisition in 1985 until 1988, crops were very poor. In 1988, a new cooperative farmer was enlisted. They did a good job in 1988 and an even better job in 1989. In fact, the Soil Conservation Service (SCS) folks who help check production each year, were very impressed with the improvement in crops.

The following table depicts crops for 1989 and the tentative crops for 1990.

<u>CROP</u>	<u>COOP</u>	<u>GOVERNMENT</u>	<u>TOTAL</u>
		<u>1989</u>	
Corn	132	119	251
Millet		81	81
Coops Choice	462		462
		Total	<u>794</u>
Winter Wheat	75%	25%	384
		<u>1990</u>	
Corn	129	200	329
Coop Choice	530		530
		Total	<u>859</u>

The problem with corn in the government share is manipulation. This could result in a baiting situation in the eyes of Law Enforcement officials. This will be a major concern in the fall of 1990 due to encroachment of boundary line hunters on the tract north of Highway 87.

POPULATION SURVEYS

TWRA flies aerial surveys every two weeks. We fly alternate weeks with ground counts on irregular intervals. With the assistant gone in December 1989, ground counts were even more irregular.

There is a serious disturbance problem due to ingress- egress from inholdings. Early entrance to inholdings on days counts are made, would have an adverse impact.

WOOD DUCK BOX PROGRAM

There has been a sizable wood duck roost in Gum Pond for several years. Some broods have been seen in King Pond for the last couple of years.

The first wood duck boxes were erected this winter. To date, there has been no check to see if they are being used.

BANDING/COLLARING

The first banding effort was made at Lower Hatchie last summer on pre-season wood ducks with no success. I attribute at least part of our failure on the distance the previous assistant manager had to drive to get to the site. With the new assistant living locally, I suspect success may improve.

This past overwintering period with 20,000 Canadas on hand would have been a good time to collar geese. Unfortunately, personnel was at a low ebb. With a new assistant on board in May, we should have ample opportunity to set up a banding program. Again, we may have a problem with bait in the eyes of Law Enforcement officials. Also, we should discuss swim-in and rocket net trapping techniques.

PROBLEMS

Inholdings

New goose pits on in-holdings

Levee and ditch erosion

RECOMMENDATIONS

LAND ACQUISITION LOG

LOWER HATCHIE

<u>PURCHASE DATE</u>	<u>TRACT NUMBER</u>	<u>OWNER (S)</u>	<u>ACRES</u>
June 19, 1980	10	Shannon Brothers	390
December 16, 1980	10 (a)	Shannon Brothers	704.59
December 14, 1981	19	Gary K. Bilderback	174
December 14, 1981	22	Gus Hargett & Son, Inc.	17.50
December 15, 1981	31	C.H. Sullivan, et al	102.50
December 15, 1981	33	C.H. Sullivan, Chris Sullivan	241.20
December 15, 1981	33 (a)	C.H. Sullivan, Chris Sullivan	171.15
January 11, 1982	20	Hughes Bringle	154.40
February 11, 1982	29	Sullivan, Richard S.	23.58
December 9, 1982	35	Nature Conservancy	8.26
January 5, 1985	35 (a & b)	Gene Anderson/ Nature Conservancy	294.27
February 8, 1985	35 (c)	Gene Anderson/ Nature Conservancy	343.33
May 31, 1985	33 (b-I)	C.H. Sullivan, Chris Sullivan	1,385.962
September 25, 1985	35 (d)	Cyburn Sullivan, et al	47.13
May 8, 1986	35 (f)	Cyburn Sullivan, et al	80.06

REFUGE OBJECTIVES

Lower Hatchie National Wildlife Refuge
(4,140 acres)

<u>REFUGE OBJECTIVES</u>	<u>UNIT</u>	<u>OUTPUTS</u>
Hunting	AH	8,000
Fishing	AH	8,000
Wildlife Observation	AH	5,000
Waterfowl Maintenance	UD	700,000
Geese		200,000
Ducks		500,000
Waterfowl Production	EA	600

MISSION STATEMENT:

To preserve for public benefit a representative portion of bottomland hardwood forest as wintering waterfowl and other migratory bird habitat.

REQUIRED MANAGEMENT PROGRAMS:

Lower Hatchie National Wildlife Refuge is located on both sides of the Hatchie River near its confluence with the Mississippi River. Habitat is predominantly forested with some croplands. Management programs include public hunting and fishing, cooperative farming, protection (enforcement), and periodic forest management (planting and harvesting to maintain diversity of species). Newly acquired lands will facilitate implementation of moist soil management and conventional goose management techniques.

Approved By:

Marvin L. Nichols
Refuge Manager

9-23-87
Date

John C. Oberheu
Refuge Supervisor

9-25-87
Date

Herald W. Lenson
Assistant Regional Director
Refuges and Wildlife

9-28-87
Date

LOWER HATCHIE

<u>YEAR</u>	<u>DUCK USE DAYS</u>	<u>PEAK</u>	<u>GOOSE USE DAYS</u>	<u>PEAK</u>
1982	57,600			
1983	128,210		1,550	
1984	217,560		14,750	
1985	251,910		2,880	
1986	220,920		55,230	
1987	410,220		660	
1988	270,893	3,000	434	35
1989	523,292	10,200	136,011	18,000
1990*	79,624	5,669	261,000	20,000

*JANUARY 1990

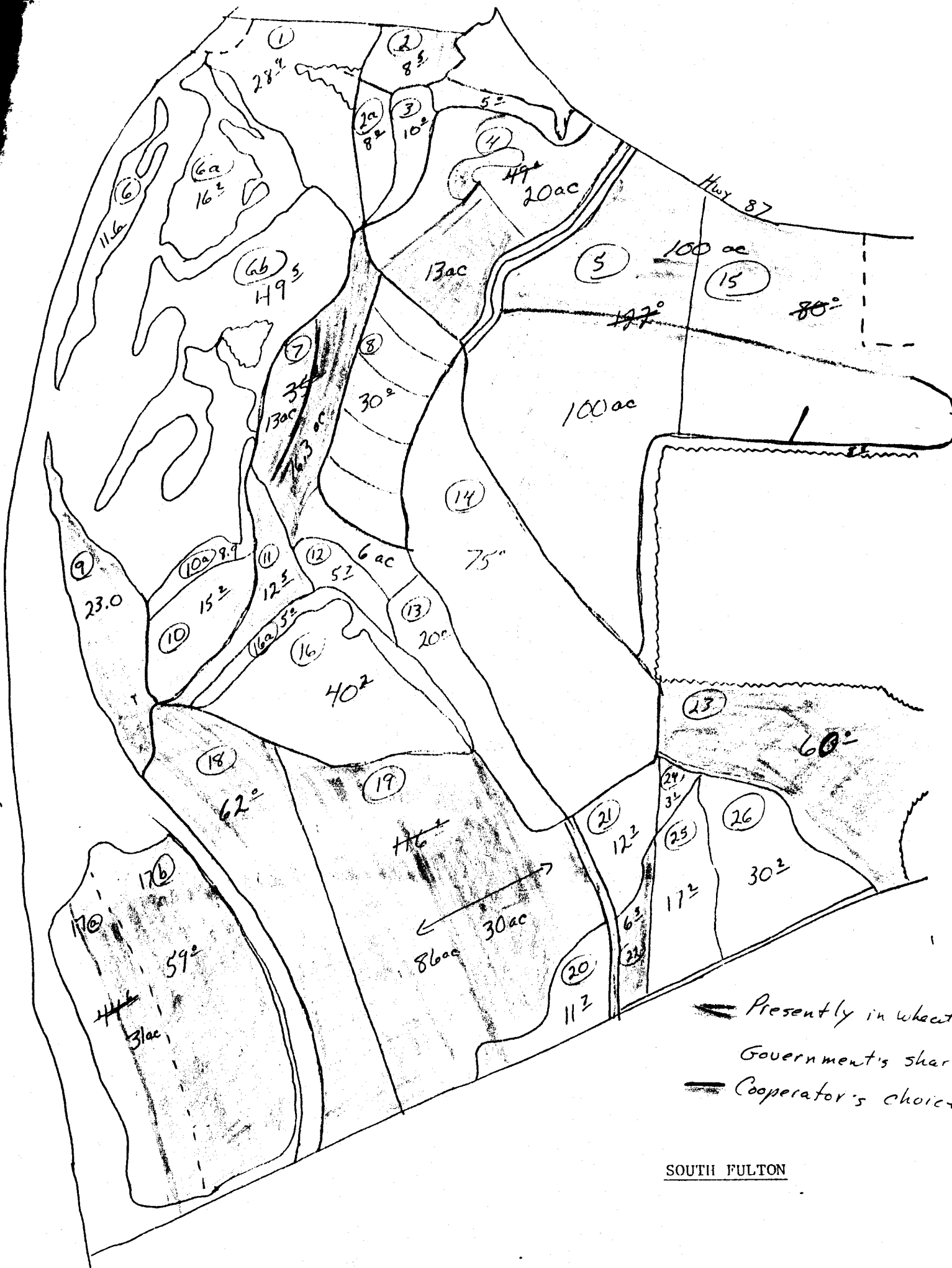
LOWER HATCHIE 1989

	<u>CANADA GEESE</u>		<u>MALLARDS</u>		<u>ALL DUCKS</u>	
<u>MONTH</u>	<u>USE DAYS</u>	<u>PEAK</u>	<u>USE DAYS</u>	<u>PEAK</u>	<u>USE DAYS</u>	<u>PEAK</u>
JAN	259	10	45,875	1,900	72,858	3,020
FEB	615	58	12,420	825	19,130	1,325
MAR	560	40	1,504	100	9,712	270
APRIL	160	20	1,160	100	9,036	485
MAY	158	9	310	10	7,027	237
JUNE	390	13	1,110	40	8,755	300
JULY	118	13	920	40	7,450	300
AUG	121	6	620	20	7,246	250
SEPT	18	2	600	20	29,270	1,040
OCT			2,245	200	21,840	1,050
NOV	40	8	63,550	4,000	92,155	5,010
DEC	<u>133,572</u>	<u>18,000</u>	<u>211,000</u>	<u>9,000</u>	<u>238,813</u>	<u>10,200</u>
	<u>133,011</u>	18,000	<u>341,314</u>	9,000	<u>523,292</u>	10,200

1990

JAN	261,000	20,000	69,300	5,000	79,624	5,669
FEB			10,400	500	15,780	660
MARCH			52,000	2,500	18,500	4,200
	<u>261,000</u>	<u>20,000</u>	<u>131,700</u>	<u>5,000</u>	<u>173,904</u>	<u>5,669</u>

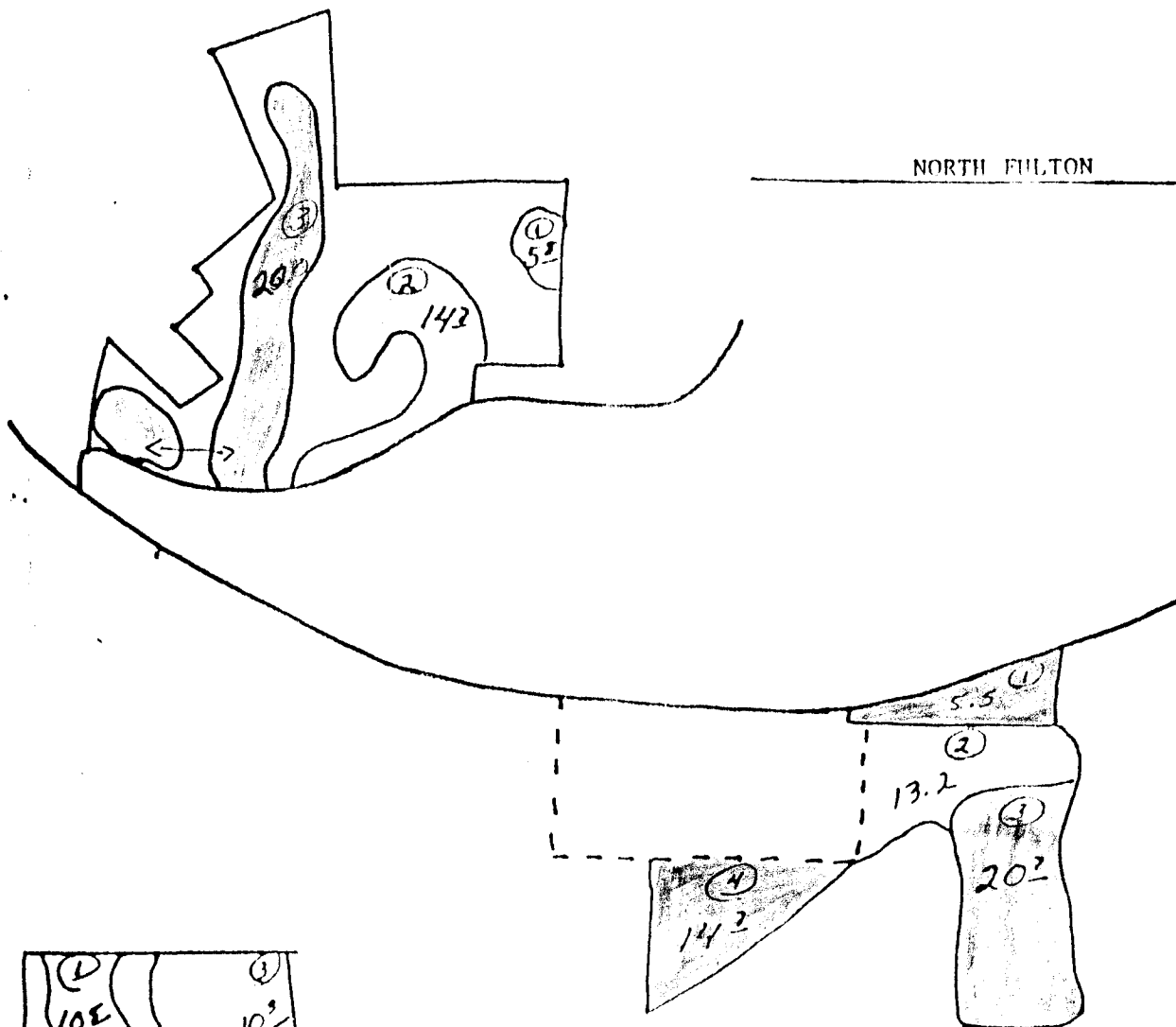
115 River



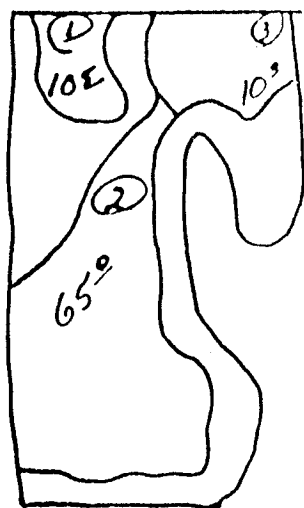
← Presently in wheat
Government's share
— Cooperator's choice

SOUTH FULTON

NORTH FULTON



CHAMPION LAKE



DUCK LAKE

